ABSA
the pressure equipment safety authority

TECHNICAL SAFETY BC

Manitoba

Technical Safety Authority of Saskatchewan

Harmonized Requirements for Historical Boilers

AB-534

Edition 3, Revision 0
Issued 2025-10-21

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FOREWORD

This document has been issued to describe requirements for historical boilers. This document has been developed and endorsed by the following regulatory authorities: Alberta (ABSA), British Columbia (TSBC), Manitoba (Inspection and Technical Services - ITS) and Saskatchewan (TSASK). This document provides harmonized requirements for historical boilers as established by the participating regulatory authorities. The requirements specified herein provide compliance guidance to the legislation that is in effect in each jurisdiction, and the specific requirements of each jurisdiction. When there is a conflict between the requirements contained herein and the specific requirements in the jurisdiction, the requirements of the jurisdiction shall take precedence.

This document is published by ABSA on behalf of the aforementioned regulatory authorities and is controlled in accordance with ABSA's ISO 9001: 2015 registered Quality Management System with the following modifications:

- Revisions to Part 1 are made by consensus of the participating organizations and with input from affected stakeholders.
- Revisions to Part 2 are approved by the respective regulatory authority.

This document is scheduled to be reaffirmed in 2030.

PART 1 - COMMON REQUIREMENTS

1.0 INTRODUCTION

AB-534 Harmonized Requirements for Historical Boilers has been issued to reflect industry recognized good engineering practices that address the requirements for historical boilers. This document provides information to assist users in ensuring the safe operation of their historical boiler. This document does not apply to steam locomotive boilers.
This document, for the requirements of historical boilers, is based on applicable portions of CSA B51and the National Board Inspection Code (NBIC) Part 2 Supplement 2.

NBIC Part 3 Supplement 2 shall be used as good engineering practice in developing repair procedures.

Note: *CSA B51 introduced requirements for historical boilers of new construction versus historical boilers in the 2019 edition. The current adopted edition of CSA B51 Annex I should be referenced for details.*

Should there be a conflict between the legislation of the local jurisdiction and the requirements of this document or any referenced standard, the legislation of the local jurisdiction shall take precedence.

This document was developed in cooperation with the referenced regulatory authorities and in cooperation with the historical boiler associations from their respective jurisdictions. The input of all participants has been invaluable in compiling this document.

To ensure this document remains relevant and of value to stakeholders, it shall be reviewed periodically to confirm that it is aligned with current industry best practices and policies. Any suggestions for improvement are welcome. Please provide comments to:

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The following elements are addressed in this document:

- The inspection of historical boilers and how CSA B51 and NBIC are used as the basis for inspection.
- The inspection of lap-seam boilers and how an owner is allowed to operate the boiler at its calculated MAWP as described in CSA B51 and NBIC Part 2 Supplement 2.
- The mobility requirements should an owner wish to operate their historical boiler in one of the listed provinces other than their home province.

2.0 DEFINITIONS AND ACRONYMS

Competent – in relation to a person, means possessing the appropriate qualifications, knowledge, skill and experience to perform the work safely.

Equipment records – includes design information, data reports, inspection plans, and inspection, repair, and alteration records.

External inspection – a visual examination performed from the exterior of pressure equipment to find conditions that could impact the equipment's ability to maintain pressure integrity. It includes verification of the pressure relief devices.

Function test – The process of having the operator slowly raise the pressure up to the boiler MAWP causing the safety valve to open.

****Historical boiler*** – A steam boiler of riveted or welded construction (including steam tractors, traction engines, hobby steam boilers, portable steam boilers, steam locomotive boilers, and other such boilers) built prior to 1955 that is being preserved, restored, and maintained for demonstration, viewing, or educational purposes.

****Note**: AB-534 does not apply to locomotive boilers.*

In-service – the period of time during the life of pressure equipment from the beginning of commissioning until disposal.

In-service inspection – a widely used term to describe activities associated with an item of pressure equipment after it has been installed but before it has been permanently retired from service.

Internal inspection – an inspection performed from the inside of an item of pressure equipment using visual and/or nondestructive examination techniques.

Maximum allowable working pressure (MAWP) – means the pressure authorized on the design registration or a lesser pressure as indicated on the manufacturer's data report and indicated on the certificate of inspection permit or license issued by the governing jurisdiction.

NBIC – National Board Inspection Code

Non-destructive examination (NDE) – Any of a number of techniques that can be used to examine a material, component, or system without causing damage. Common techniques include visual, ultrasonic, magnetic particle, liquid penetrant, radiographic, and eddy-current testing.

Operating permit or license – means a document issued by the regulatory authority authorizing the operation of a historical boiler.

Owner – includes a lessee, a person in charge, a person who has care and control and a person who holds out that the person has the powers and authority of ownership or who for the time being exercises the powers and authority of ownership.

Referenced documents – are documents that outline procedures, actions or strategies as they relate to a particular activity, standard or code.

Regulatory authority – a body responsible for administering and enforcing the legislation governing the design, fabrication, installation, repair, and alteration of boilers, pressure vessels, fittings, and piping (CSA B51).

3.0 OWNER'S RESPONSIBILITIES

3.1 General

Effective processes and procedures regarding the design, inspection and maintenance are indispensable to the safe operation of pressure equipment. Pressure equipment safety cannot be assured unless the owner has effective processes and procedures that cover the full lifecycle of their pressure equipment, encompassing design, construction, installation, operation, maintenance, inspection and decommissioning. This document defines the requirements for historical boilers. CSA B51 and the NBIC Code Part 2 Supplement 2 will be used for the foundation of these requirements.

3.2 CSA B51

- Requirements for lap-seam riveted boilers, except for historical boilers.
- Requirements applicable to historical boilers, refer to Annex I which provides detailed requirements for inspection. Annex I also provides helpful information for preparing design submissions for registration.

3.3 NBIC Part 2 Supplement 2

- The referenced standard that will be used for the inspection of historical boilers.

3.4 NBIC Part 3 Supplement 3

- The referenced standard that will be used for preparing repair plans for historical boilers.

4.0 DETAILS

4.1 Design Registration (CSA B51 Annex I)

Prior to the historical steam boiler being placed into service, the design shall be registered with the authority having jurisdiction.

4.2 Calculations for Existing Equipment (CSA B51 Annex I)

The maximum allowable working pressure (MAWP) shall be calculated, based on the lesser of the original thicknesses from the affidavit/manufacturer's data report or registered drawings or thickness results from non-destructive examinations (NDE) and the original factors of safety from the code of construction used, by computing the strength of each boiler component.

The MAWP shall be the lesser of

(a) the MAWP based on the computed strength of the weakest component; and
(b) the original design MAWP.

If the original code of construction is unknown, incomplete, or otherwise unacceptable, the appropriate edition and section(s) of the ASME Code shall be applied. Catalogues and advertising literature shall not be acceptable sources for tensile strength values and original thickness specifications.

4.3 Construction/Repairs

The owner shall have records validating the construction of any pressure equipment. This includes documentation of the original construction and any repairs or alterations. The construction may be documented on a manufacturer's data report or specification sheet. Repairs or alterations shall be documented on the appropriate form from the regulatory authority where the repair was performed, or on a National Board R-1 or R-2 form. In all cases repair and alteration forms must be signed by a National Board commissioned inspector holding the "R" endorsement, deemed competent with historical repairs and employed by the regulatory authority where the repair was performed

4.4 Operation

An operating permit or license shall be obtained from the regulatory authority where the historical boiler will be operated. Prior to the issuance of an operating permit or license, the boiler must be inspected by an inspector employed by a

regulatory authority (see reference to inspection in the Maintenance section below). Each regulatory authority identified in this document may have additional requirements. For these additional requirements, refer to the appropriate supplement included in this document.

The operator of a historical boiler shall hold the appropriate valid certificate (license, certificate of qualification, certificate of competency, etc.) issued by the jurisdiction where the historical boiler will be operated. See the appropriate supplement for the requirements of the jurisdiction.

Training records and an operating logbook shall be maintained to show how the operator has been trained and assessed as competent.

Valid operating permits/licenses may be accepted for transfer by the provinces referenced in this document providing requirements of the general section of this document are met. The destined operating province may have additional requirements which are detailed in the provincial supplement section of this document.

4.5 Inspection and Maintenance

As part of the ongoing maintenance of a historical boiler, the owner must conduct periodic internal and external inspections to ensure the boiler is safe to operate and in good working condition. When not in service, historical boilers must be stored in a manner that prevents unintentional damage (corrosion, freezing etc.).

Additionally, historical boilers shall be subject to annual inspections by an inspector holding a National Board In-service Commission and employed by a regulatory authority. The inspection shall conform to CSA B51, NBIC Part 2 Supplement 2 and the specific requirements of the regulatory authority where the boiler is located.

Each historical boiler shall be hydrostatically pressure tested in accordance with NBIC S2.6.1 every three years and the test shall be witnessed by the regulatory authority. The test pressure shall be no less than 1.25x the calculated MAWP for a minimum of 10 minutes or until a complete inspection can be made. At the time of the test, the water and boiler metal temperature shall be between 16ºC and 49ºC. Dial pressure gauges used in testing should have a range of approximately double the intended maximum test pressure, but in no case shall the range be less than 1½ nor more than 4 times that pressure. The test gauge must be in good working order and its accuracy should be verified periodically through calibration*. The owner shall ensure that any pressure tests are conducted safely.

****Note:** *Calibrations should be traceable to a national measurement standard.*

Repairs and alterations to historical boilers shall be performed by the holder of a quality control program that defines in its scope the repairs to ASME Section I boilers. This quality control program shall be current and the certificate of authorization shall be issued by the regulatory authority where the repair or alteration will occur. The regulatory authority may accept repairs performed by the holder of a National Board “R” stamp program.

All repairs and alterations shall be approved by the regulatory authority before work commences. Changes in the boiler condition might justify recalculation of the MAWP in accordance with the method provided in CSA B51 Annex I, Clause I.2 and shall be treated as an alteration if recalculated to a different value (See Annex I, Clause I.9).

An inspector, holding the National Board “R” endorsement, and employed by the regulatory authority where the repair or alteration will occur, shall be involved throughout the duration of the repair or alteration and shall inspect and certify the repair or alteration on the appropriate form(s) once the work is completed.

4.6 Safety Valves

Safety valve(s) shall be serviced at a minimum every five years by the holder of a certificate of authorization for the servicing of Section I (“V” stamped and “NB” capacity certified) safety valves.

The owner shall ensure that a function test of the safety valve is conducted safely at every initial steaming of the historical boiler each season or when the boiler has been laid up for an extended period of time. The function test is accomplished by having the operator slowly raise the pressure up to the boiler MAWP causing the safety valve to open.

4.7 Fusible Plugs

The fusible plug is to be inspected annually for deterioration. The threads where the plug is inserted shall be inspected for corrosion. The fusible plug operating hours shall be recorded in the owner’s logbook.

Fusible plugs shall be replaced after 500 hours of operation. If operating hours cannot be validated the fusible plug shall be replaced every 3 years as per NBIC S2.8.4. Fusible plug life shall not exceed ten calendar years and leaking fusible plugs shall be replaced.

4.8 Decommissioning

Historical boilers that are decommissioned because they are no longer fit for service should be left in a condition to ensure they cannot be pressurized. The regulatory authority must to be notified of any historical boiler that has been decommissioned.

5.0 ADDITIONAL INSPECTION REQUIREMENTS

5.1 NDE Requirements

NDE inspections, as described in NBIC for initial testing are to be performed at the initial inspection and repeated every five years.

NDE technicians shall be CGSB level 2 or SNT level 2 and familiar with the inspection of historical boilers.

A detailed map of where readings are taken shall be maintained so that reading locations may be repeated.

Straight beam ultrasonic testing (UT) of all shell areas without stays shall be taken at a maximum grid pattern of 12 inches. Additional readings shall be taken if conditions warrants or in areas where thinning is suspected. Concerning stayed sections, the plate thickness readings shall be taken on a grid not exceeding the maximum staybolt pitch. Additional readings may be taken close to each staybolt to determine if localized thinning has occurred.

Straight beam UT of tube sheets and the dome shell shall be taken in a 6 inch grid pattern.

Close attention must be given to rivets which are showing signs of weakening. This will be evident from leakage especially during the hydrotest. NBIC S2.10.2.2 shall be used as guidance to inspect corroded rivets.

Perform straight beam UT of 100% of the firebox stays. Radial stays shall be visually examined from the rear hand hole or by using a borescope.

Shear wave UT and magnetic particle inspection (MPI) 100% of the lap and buttstrap longitudinal seams in the shell and the dome to validate no shell plate cracking. MPI must also be performed of all areas susceptible to cracking such as knuckles and Ogee joints. Due to the ability to inspect the lap and butt-strap long seams of the shell and the dome using UT techniques there is no longer a need for slotting of riveted joints nor is it advisable.

UT thickness readings of the various components are to be used to calculate the MAWP following the process described in CSA B51 Annex I and NBIC Part 2 S2.10.

6.0 INTER-PROVINCIAL MOBILITY OF HISTORICAL BOILERS

6.1 Initial Inspection of Existing Equipment

Historical boiler owners wishing to operate their historical boiler in another province shall satisfy all the requirements of the destination province. Refer to the appropriate supplement for the details of these requirements.

Owners should be prepared to present UT surveys and NDE records, calculation of the MAWP of the boiler, inspection records signed by the National Board commissioned inspector employed by the regulatory authority in the home province. The acceptable inspection standards are CSA B51 and NBIC Part 2 supplement 2 (the inspection for historical boilers).

The owner shall have copies of the certification of the safety valve(s) showing that the safety valve(s) was serviced and tested in the last five years and a logbook documenting any function test(s) performed. The owner shall also have calibration records for the main pressure gauge showing re-certification within the current year.

6.2 Operator Certification

The historical boiler operator shall hold a valid certificate or license to operate issued by the local authority where the historical boiler will be operated. Refer to the appropriate supplement for details on how to obtain this certification. The owner shall also have training and assessment records of each operator showing how the operator was deemed competent to operate the historical boiler.

6.3 Validation of Integrity

The regulatory authority, where the historical boiler is intended to be operated, shall be notified a minimum of three weeks prior to the intent to operate the historical boiler. This will allow the local inspector time to review inspection records and to schedule any additional inspections required. Any outstanding inspection issues identified from the originating regulatory authority shall be cleared prior to operation in another province.

Once the historical boiler arrives in the destination jurisdiction, the jurisdictional inspector will perform an external inspection ensuring that no damage occurred during transportation.

The operator shall be requested to conduct a function test by slowly bringing the pressure up to the accepted MAWP causing the safety valve to open. This action demonstrates the boiler is sound for operation and validates that the safety valve will function and protect the boiler at its MAWP.

A certificate of inspection or a license to operate may be issued by the new jurisdiction authorizing the historical boiler to be operated if:

- The inspection records are acceptable;
- The function testing of the safety valve is successful by raising the pressure of the boiler to the safety valve setting;
- No damage is evident from the transportation of the historical boiler;
- The design is registered in the province where the historical boiler will be operated, and;
- The operator has the required operating certificate or license.

PART 2 - JURISDICTION-SPECIFIC SUPPLEMENTS

SUPPLEMENT 1 – ALBERTA

1.0 INTRODUCTION

In addition to the common requirements in this document, this supplement describes requirements under the Alberta Safety Codes Act and Regulations, applicable for the operation of historical boilers in the Province of Alberta. This supplement includes requirements for lap-seam boilers, and additional requirements for owners of historical boilers wishing to operate their historical boiler in the province of Alberta.

The requirements for operation of historical boilers are defined in the Safety Codes Act and its Regulations.

The following documents are applicable to the in-service inspection and repair of historical boilers in Alberta and can be found at www.absa.ca.

- AB-506 – *Inspection and Servicing Requirements for In-Service Pressure Equipment*
- AB-513 – *Pressure Equipment Repair and Alteration Requirements*

2.0 DEFINITIONS AND ACRONYMS

ABSA – is the organization delegated by the Government of Alberta to administer the pressure equipment safety legislation under the Safety Codes Act. ABSA is the regulatory authority in Alberta as defined in Part 1 of this document.

ABSA Safety Codes Officer – means a safety codes officer, designated under the Act, in the pressure equipment discipline. [PESR 1(1)(ee)]. ABSA Safety Codes Officer is the regulatory authority inspector as used in Part 1 of this document.

Act and Regulations – Means the Alberta Safety Codes Act and the following regulations:

- Pressure Equipment Exemption Order (158/2014)
- Pressure Equipment Safety Regulation (195/2015)
- Power Engineers Regulation (84/2014)
- Pressure Welders Regulation (103/2014)

Administrator – means the Administrator in the pressure equipment discipline appointed under the Act [SCA, 1(1)(e)].

Certificate of Authorization Permit (CAP) – means a permit issued pursuant to section 44 of the Act authorizing a person to carry out the activities stated on the certificate of authorization permit. [PESR 1(1)(g)]. This indicates a person has an accepted quality control program as used in Part 1 of this document.

Certificate of Inspection Permit (CIP) – means a permit issued pursuant to section 44 of the Act authorizing the operation of a boiler, pressure vessel, fired-heater pressure coil or thermal liquid heating system as stated on the certificate of inspection permit.

Integrity Management System (IMS) – means a system for ensuring that pressure equipment is designed, constructed, installed, operated, maintained and decommissioned in accordance to the regulations.

Owner – includes a lessee, a person in charge, a person who has care and control and a person who holds out that the person has the powers and authority of ownership or who for the time being exercises the powers and authority of ownership [SCA 1(1)(v)].

PESR – Pressure Equipment Safety Regulation (Alberta Regulation 49/2006)

PER – Power Engineers Regulation (Alberta Regulation 85/2003)

3.0 OWNER'S RESPONSIBILITY

3.1 General

The Pressure Equipment Safety Regulation (PESR) Section 37 details the responsibilities of the owner:

a. The pressure equipment meets the requirements of this Regulation (PESR),
b. An integrity management system is in place for the pressure equipment,
c. The pressure equipment and pressure relief devices, pressure gauges and regulating or controlling devices on them are maintained in good working order and are operated safely,
d. Safe operating limits are established for the pressure equipment,
e. The pressure equipment is operated within established safe operating limits,
f. There are adequate and suitable instructions for the safe operation of the pressure equipment, and
g. The person operating the pressure equipment is competent.

The Pressure Equipment Safety Regulation (PESR) Sections 45 & 46 contains specific requirements applicable to historical boilers. Additionally, the Power Engineers Regulation mandates the operator of a historical boiler hold a valid Special Steam-Powered Traction Engine Certificate of Competency.

Note regarding locomotive boilers (railway): Locomotive boilers are not included in the scope of this document. Locomotives in the Province of Alberta are administered as follows:

a) locomotives on Federal track come under federal rules
b) locomotives operating on provincial track that are of standard width (4'8.5 inch) come under Alberta transportation and ABSA inspects the boilers on the behalf of Alberta Transportation;

c) locomotives operating on tracks that are less than standard width come under the jurisdiction of Alberta Elevators and Amusement rides (AEDARSA). Again ABSA inspects the boilers on their behalf
d) AEDARSA exempts miniature locomotives (track width 12 inch and under) and define them as hobby boilers.

4.0 REQUIREMENTS

4.1 Design

PESR section 14 mandates the design of pressure equipment shall be registered.

4.2 Operation

PESR section 33 mandates that a Certificate of Inspection Permit shall be issued prior to the operation of any pressure equipment in the Province of Alberta.

In order to receive the Permit, an ABSA Safety Codes Officer must annually inspect the boiler internally and externally. This inspection may also review of NDE, confirmation of operator qualifications, review of logbooks and any other matter related to the safe operation of the boiler.

4.3 Repairs

PESR section 40 established requirements for repairs and alterations. Repairs and alterations to historical boilers shall be performed by the holder of a certificate of authorization permit with the scope for the repair of ASME Section I repairs. Welders shall meet all the requirements of the Pressure Welders Regulation and hold a valid performance qualification card. Welding shall be performed by following a valid registered welding procedure (WPS). Repairs performed outside of Alberta, but within Canada, shall be done by the holder of an equivalent registered quality program issued by the Canadian jurisdiction where the repair will occur or by the holder of the National Board R stamp program.

An ABSA Safety Codes Officer must be notified prior to starting any repair or alteration that will be undertaken in the Province of Alberta. Refer to AB-513 for details. Repairs shall be inspected and certified by an ABSA Safety Codes Officer.

4.4 Lap-seam Boilers

PESR section 45(1) states: "*After a riveted longitudinal lap joint boiler's or pressure vessel's 20th year of age, the factor of safety must be increased by at least 0.1 each year".* Owners, wishing to operate their longitudinal lap joint boiler at the calculated MAWP rather than the mandated MAWP as defined in PESR

section 45(1), need apply to the Administrator for a variance to clause PESR 45(1) for the historical boiler in question and provide documentation that justifies equivalent safety.

4.5 Decommissioned

ABSA requires notification, per PESR 36(1) (b), whenever pressure equipment is decommissioned. ABSA form AB-10 shall be used for ABSA notification and confirmation of decommissioning. This process invalidates the Certificate of Inspection Permit.

4.6 Inter-Provincial Mobility of Historical Boilers

Historical boiler owners from other jurisdictions wishing to operate their boiler in the province of Alberta shall demonstrate integrity and have valid inspection records that meet all of the above requirements.

ABSA shall be notified a minimum of three weeks prior to the intent to operate the historical boiler in Alberta. An ABSA safety codes officer shall review the documentation, perform the visual external inspection and witness the safety valve demonstration all as prescribed in Part 1 section 6 of this document. A certificate of inspection permit may be issued to authorize the operation of historic boilers that comply with Part 1 and which otherwise meet the requirements of the PESR.

The historical boiler operator shall obtain a Special Steam-powered Traction Engine Operator’s Certificate of Competency. This certificate may be obtained in two methods: validation of the equivalent certificate from another province and have the certificate recognized and have an Alberta certificate of competency issued or undertaking the examination as described in PER section 22.1. The application process is described on ABSA’s website.

The Fee Schedule for Delegated Functions effective Oct. 1, 2014 mandates that pressure equipment, including boilers, which reside in the province of Alberta must pay an annual fee. Details of this fee schedule may be found on the ABSA website absa.ca. Boilers, which do not reside in the province of Alberta and require inspection followed by the issuance of a Certificate of Inspection Permit in order to operate in the province of Alberta, may be required to pay a special inspection fee for the inspection.

SUPPLEMENT 2 – MANITOBA

1.0 INTRODUCTION

This supplement describes requirements under the Manitoba Steam and Pressure Plants Act and Regulations, applicable to the operation of historical boilers in the Province of Manitoba. This supplement includes requirements for historical steam boilers of riveted and/or welded construction, and additional requirements for owners of historical boilers wishing to operate their historical boiler in the province of Manitoba.

2.0 DEFINITIONS AND ACRONYMS

Act and Regulations – Means the Manitoba Steam and Pressure Plants Act and Regulations, and Power Engineers Act and Regulations:

Authorized Inspector (AI) – National Board “R” endorsed inspector.

Initial Inspection – Prior to being placed into service, a historical boiler shall be thoroughly inspected internally and externally and shall be subjected to an appropriate hydrostatic test based on the MAWP determined in accordance with Clause I.2 of CSA B51-24. – *See CSA B51 Annex I for additional information regarding initial inspections.*

ITS – Inspection and Technical Services is the Agency responsible for the administration of the Steam and Pressure Plants Act and Regulation and Power Engineers Act and Regulation.

3.0 REQUIREMENTS

a. Registration

The registration of Historical Boilers in Manitoba shall conform to CSA B-51 paragraph I.2. In addition to I.2, the following documents are required to obtain a Canadian Registration Number (CRN):

i. ITS ES Form-02 CRN Design Registration Application Form
ii. Original Design Drawings
    a. If original design drawings are not available, as-built drawings of the historical boiler may be accepted in lieu. Contact a design surveyor for more information regarding the limitations required for as-built drawings.
iii. The maximum allowable working pressure (MAWP) calculated in paragraph I.2 shall be submitted. Any unit with a MAWP in excess of 175psi will not be allowed to operate above 175psi in Manitoba as per the Manitoba Steam and Pressure Plants Regulation paragraph 7.1(1).
iv. Non Destructive Examination (NDE) results and previous inspection reports (if applicable) issued by other provincial jurisdictional authorities.

v. Manufacturers Data Report (MDR)
vi. Picture of the Data Plate or Other Unique Identification marks to link the MDR to the unit.

b. Repairs

Repairs and alterations to historical boilers shall be performed by a holder of a valid certificate of authorization. Welders shall meet all the requirements of the Act and Regulations and hold a valid performance qualification card. Welding shall be performed by following a valid registered welding procedure (WPS). Repairs performed outside of Manitoba, but within Canada, shall be done by a holder of an equivalent registered quality program issued by the Canadian jurisdiction where the repair will occur or by a holder of the National Board R stamp program.

Work performed on Historical Boilers within Manitoba shall be documented on ITS ES Form 01 – Repair and Alteration Report, and submitted to QASupport@gov.mb.ca for review and registration. Once registered, the organization may begin work as outlined in the repair procedure. Repairs and alterations performed after the initial inspection shall be subject to inspection by an AI.

Note: Owners or repair organizations must register all repairs and alterations with the ITS.

c. Inspections

Owners must be knowledgeable with the inspection intervals as described in NBIC Part 2, S2.7.3.

When a historical boiler is ready to be put into service in accordance with NBIC and ASME Sec I, the owner shall contact the AI for an initial inspection, as detailed in paragraph I.3 of CSA B51-24 and NBIC Part 2, S2.7.3.1.

Hydrostatic Pressure Testing will be done in accordance with NBIC Part 2, S2.6.1. The owner or repair organization is responsible to supply their own testing equipment and perform the hydrostatic test, during which the AI shall witness the test. Calibration records for the gauges must be available for the AI to review when requested.

Upon successful completion of the Initial Inspection, the owner will receive an Operating Certificate for the boiler.

The AI shall be notified a minimum of three weeks prior to the desired inspection date.

The AI shall witness the Initial Inspection and Intervals one thru three (NBIC Part 2, S2.7.3.2 Subsequent Inspections). All other requests for an AI will be to the discretion of that AI.

d. Historical Boiler Storage

Owners are encouraged to follow the general recommendations for storage of historical boilers as described in NBIC Part 2, S2.13.

Inspection intervals post storage condition, shall follow the described below:

i. If the unit has been stored for more than 3 years, then inspection intervals post storage shall restart (Starting with Initial Inspection as described in NBIC Part 2, S2.7.3.1).
ii. If the unit has been stored for up to & including 3 years; then the inspections post storage shall include all the inspection intervals missed; in addition to the interval of the current year.

e. Decommissioned

ITS requires notification, whenever pressure equipment is decommissioned.

f. Inter-Provincial Mobility of Historical Boilers

Historical boiler owners from other jurisdictions wishing to operate their boiler in the province of Manitoba shall demonstrate unit integrity and have valid inspection records that meet all the above requirements.

ITS requests notification a minimum of three weeks prior to the intent to operate the historical boiler in Manitoba. An ITS inspector will review the documentation, perform the visual external inspection and witness the safety valve demonstration all as prescribed in Part 1 section 6 of this document. A certificate of operation may be issued to authorize the operation of historic boilers that comply with Part 1 and which otherwise meet the requirements of the Steam and Pressure Plants Regulation.

The historical boiler operator shall obtain a Special Steam-powered Traction Engine Operator’s Certificate. This certificate may be obtained in two methods: validation of the equivalent certificate from another province and have the certificate recognized and have a Manitoba certificate of competency issued or undertaking the examination as described in Power Engineers Regulation section 5(8).

For details contact:

Inspection and Technical Services (ITS)
Phone: 1-204-945-3373
Email: TechnicalServices@gov.mb.ca

SUPPLEMENT 3 – BRITISH COLUMBIA

1.0 INTRODUCTION

This supplement describes requirements under the British Columbia *Safety Standards Act* and Regulations, applicable for the operation of antique show boilers (historical boilers) in the Province of British Columbia.

The requirements for operation of antique show boilers are defined in the *Safety Standards Act* and its Regulations.

2.0 DEFINITIONS AND ACRONYMS

Antique show boiler (historical boiler) – means a boiler forming part of a traction engine, threshing machine, steam locomotive, steam crane, donkey boiler plant or other plant of historical interest.

Technical Safety BC –Technical Safety BC (formerly known as BC Safety Authority) is an independent organization delegated by the Government of British Columbia to oversee the safe installation and operation of technical systems and equipment under the Safety Standards Act.

Safety Officer – means an individua, appointed under section 11 of Safety Standards Act and who holds a Certificate of qualification as a Safety Officer under section 65 of Power Engineers, Boiler, Pressure vessel and Refrigeration Safety Regulation.

Act and Regulations – Means the British Columbia *Safety Standards Act* and the following regulations:

- Safety Standards General Regulation (B.C. Reg. 105/ 2004)
- Power Engineers, Boiler, Pressure Vessel and Refrigeration Safety Regulation (B.C. Reg. 104/ 2004)

Provincial Safety Manager – means an individual appointed under section 12(1) of *Safety Standards Act* as Provincial Safety Manager.

Licensed Contractor – means a person who is licensed under section 23 of *Safety Standards Act* as a licensed contractor to do regulated work in one or more disciplines specified in the license. This indicates a person has an accepted quality control program as used in Part 1 of this document.

Owner – includes a lessee, and as further defined in directive D-BP 2024-03.

PEBPVR – Power Engineers, Boiler, Pressure vessel and Refrigeration Safety Regulation (B.C Reg. 104/ 2004)

SSGR – Safety Standards General Regulation (B.C. Reg. 105/ 2004)

3.0 REQUIREMENTS

3.1 Design

PEBPVR section 84 mandates the design of all boilers, pressure vessels, fittings and pressure piping must be registered with the provincial safety manager. Exception to this requirement can be made for antique show boilers, having design registered in the originating Canadian jurisdiction, which come to British Columbia on temporary basis (not more than one month).

3.2 Operation

PEBPVR section 62 mandates that a person must hold an operating permit for each boiler and pressure vessel. To operate an antique show boiler in British Columbia, a person must have a valid operating permit and the operator must be the holder of the Antique Show Boiler Operator's certificate of qualification. The certificate of qualification entitles the holder to operate the antique show boiler that is specifically named on their certificate.

3.3 Responsibilities of Owners

PEBPVR establishes obligations of owners and requires that the owners:

a) must inform the provincial safety manager and comply with the Part-1 requirements before the antique show boiler is put in operation.

(b) must designate the antique show boiler operator's certificate of qualification holder in writing to be responsible for the operation and maintenance of, an antique show boiler,

(c) must prepare the equipment for inspection as required under section 64,

(d) must report any incidents and must conduct an investigation of the incident and submit a written report of the findings to the provincial safety manager within 30 days of the incident,

(e) must maintain records for a period of at least 7 years.

3.4 Repairs and Alteration

PEBPVR section 86 specifies that a person must not repair a boiler or pressure vessel unless the person has notified a safety officer and received approval from the safety officer for the repair procedures to be used.

PEBPVR section 87 specifies that a person must not perform an alteration to a boiler or pressure vessel unless that person has registered the alteration with the provincial safety manager.

Any repair or alteration to the pressure retaining item of antique show boiler must be performed by a licensed class “A” contractor with the scope for the repair or alteration of power boilers.

Repairs or alteration performed outside of British Columbia, but within Canada, shall be performed by the holder of an equivalent registered quality control program issued by the Canadian jurisdiction where the repair or alteration will occur or by the holder of the National Board R stamp program. The repair or alteration must be inspected and accepted by the Canadian jurisdictional inspector where the repair is performed.

3.5 Decommissioning Requirements

Once the antique show boiler leaves the jurisdiction of British Columbia or is de-commissioned, the Operating Permit Declaration of Status Change form (FRM-1539) must be submitted to Technical Safety BC, listing the unit details so that operating permits may be closed. For decommissioning of antique show boilers, owners must comply with the requirements for decommissioning of regulated products addressed in directive D-BP 2024-02 Decommissioning Requirements.

3.6 Inter-Provincial Mobility of Antique Show Boilers

Antique show boiler owners from other jurisdictions wishing to operate their boiler in the province of British Columbia shall demonstrate integrity of the boiler and have valid inspection records of the boiler that meet all of the part-A common requirements.

Technical Safety BC shall be notified a minimum of three weeks prior to the intent to operate the antique show boiler in British Columbia. Technical Safety BC’s assessment of inter-provincial antique show boilers may include but is not limited to a review of associated documentation, performance of visual external inspection and witness the safety valve demonstration as prescribed in Part 1 section 6 of this document. An operating permit may be issued to authorize the operation of antique show boilers that comply with Part 1 and which otherwise meet the requirements of the PEBPVR.

The antique show boiler operator shall obtain an Antique Show Boiler Operator's Certificate of Qualification. This certificate may be obtained in two methods:

1. Provincial safety manager may issue a corresponding certificate of qualification upon validation of the equivalent certificate from another Canadian jurisdiction under SSGR section 2.1.
2. Certificate of qualification issued under the provision of PEBPVR section 33.

The application process for obtaining certificate of qualification is described on Technical Safety BC's website certification page .

For details contact:

Technical Safety Authority British Columbia (TSBC)
Phone: 1-866-566-7233
Email: bpvrsupport@technicalsafetybc.ca

SUPPLEMENT 4 – SASKATCHEWAN

1.0 INTRODUCTION

This supplement describes the Saskatchewan requirements under The Boiler and Pressure Vessel Act, 1999 and Regulations, applicable for the operation of antique boilers and steam traction engine antique boilers in the province of Saskatchewan. This supplement includes requirements for stationary antique boilers of lap seam riveted construction, as well as additional requirements for owners of steam traction engine antique boilers who are wishing to operate in the province of Saskatchewan.

2.0 DEFINITIONS AND ACRONYMS

TSASK – Technical Safety Authority of Saskatchewan is an independent not-for-profit company established by the Government of Saskatchewan to administer and enforce the Act and Regulations.

Act and Regulations – The Boiler and Pressure Vessel Act, 1999 and The Boiler and Pressure Vessel Regulations, 2017.

steam traction engine - historical steam boilers of either riveted or welded construction or both riveted and welded construction and associated equipment that are being preserved, restored, and maintained for demonstration, viewing, or educational purposes, and includes steam tractors, traction engines, hobby steam boilers, portable steam boilers and certain steam locomotive boilers;

3.0 REQUIREMENTS

3.1 General Requirements

The Boiler and Pressure Vessel Regulations, 2017 came into force January1st, 2018 and are in effect for antique boilers and steam traction engines. Inspection, licensing, operation and repairs or alterations shall otherwise comply with the requirements of the Act and Regulations.

Operation of antique boilers; section 49 of the Regulations state:

If a lap seam riveted boiler is 20 years old or older:

a) no person shall operate the boiler unless the factor of safety is increased by 0.1 for each year or part of a year by which the age of the boiler exceeds 20 years; and

b) if the boiler is relocated, no person shall operate the boiler at a pressure greater than 103 kilopascals

Part 10 of the Regulations state all the additional requirements for steam traction engine antique boilers. The working pressure of boilers on traction engines shall not be greater than 690 kilopascals unless the owner applies to the Chief Inspector for authorization to have the operating pressure raised beyond

690 kilopascals pursuant to section 127. The application must include the results of a visual internal inspection performed by an inspector, a visual in-service inspection performed by an inspector, an initial ultrasonic examination pursuant to the requirements in Part 2, S2.6.2 of the NBBI code, a maximum allowable working pressure calculation pursuant to the requirements of Part 2, S2.10 of the NBBI code, a hydrostatic pressure test witnessed by an inspector pursuant to the requirements of Part 2, S2.10 of the NBBI code, and any other information or examination that the chief inspector may require.

3.2 Inter-Provincial Mobility of Historical Boilers

Steam traction engine owners from other jurisdictions wishing to operate their steam traction engine in the province of Saskatchewan shall notify TSASK a minimum of three weeks prior to when they intend to operate the steam traction engine in Saskatchewan to clarify the requirements of the Regulations and arrange for inspection.

3.3 Inspection

An inspection of a steam traction engine that operates in Saskatchewan at a pressure no greater than 690 kilopascals must include a visual internal inspection, visual in-service inspection and a hydrostatic test to 1380 kilopascals and must occur at intervals not exceeding 1 year and occur before the initial operation in that calendar year.

An inspection of a steam traction engine that operates in Saskatchewan at a pressure greater than 690 kilopascals must follow the subsequent inspection requirements in Part 2, S2.7.3.2 of the NBBI code and include a visual internal inspection at intervals not exceeding 1 year and occur before the initial operation in that calendar year.

3.4 Transfers of Out of Province License

When an individual has a valid Certification from a Harmonized Jurisdiction outside of the province of Saskatchewan it will be recognized for its equivalency to the corresponding license class in Saskatchewan. A practical retest will be required every two years after the original transfer application in order to retransfer or retain the certification in Saskatchewan. Logged operation time will be a requirement of practical test eligibility. If the practical test isn't passed only the equivalency of a Class 2 license will be transferred.

For details contact:

Technical Safety Authority of Saskatchewan (TSASK)
Phone: 1-866-530-8599
Email: info@tsask.ca

7.0 REVISION LOG

Edition	Revision	Date	Description
1st Edition issued 2017-08-30			
1st Edition	Rev. 1	2018-07-25	Revised to reflect BCSA name changed to Technical Safety BC
1st Edition	Rev. 2	2019-07-02	• Updated NBIC 2015 to 2017 • Minor Updates throughout • Manitoba Section rewritten
2nd Edition	Rev. 0	2020-08-19	• New edition – several editorials for clarity. Revised Manitoba for Commissioners Officer to Inspection and Technical Services (ITS).
3rd Edition	Rev. 0	2025-10-21	• New edition – several editorials for clarity • Updated references